

Claims

[c1] What is claimed is:

1.A portable dryer comprising:
a housing with an opening at one end thereof;
a motor having a fan installed inside the housing;
a first heating filament coupled to the motor;
a second heating filament coupled to the motor and the
first heating filament;
a third heating filament;
a fourth heating filament coupled to the third heating fil-
ament;
a switch for controlling operations of the portable dryer;
and
a power unit for supplying electric power;
wherein the power unit is electrically disconnected from
the motor and all electric heating filaments when the
switch is turned to an off position, the motor is electri-
cally connected to the first heating filament in series and
then to the third heating filament in parallel when the
switch is turned to a first operation position, and both
the first heating filament and the second heating fila-
ment are electrically connected in parallel and electrically
connected to the motor in series and then to both the

third heating filament and the fourth heating filament in parallel when the switch is turned to a second operation position.

- [c2] 2. The portable dryer of claim 1, wherein when the switch is turned to the first operation position, the second heating filament and the fourth heating filament are electrically disconnected from the power unit.
- [c3] 3. The portable dryer of claim 1, wherein the switch comprises a conductor and a plurality of connecting nodes, the conductor able to establish electrical connections among the plurality of connecting nodes so that the power unit is electrically disconnected from the motor and the heating filaments, or electrically connected with both the motor and the third heating filament, or electrically connected with the motor, the third heating filament, and the fourth heating filament.
- [c4] 4. The portable dryer of claim 3, wherein the conductor is rotatably installed to establish electrical connections among the plurality of connecting nodes.
- [c5] 5. The portable dryer of claim 3, wherein the conductor is shiftable to establish electrical connections among the plurality of connecting nodes.
- [c6] 6. The portable dryer of claim 3, wherein the switch is a

push-button switch.

- [c7] 7.The portable dryer of claim 1 further comprising a transformer electrically connected to the power unit for boosting an outputted voltage level of the power unit.
- [c8] 8.The portable dryer of claim 1 further comprising an overload protection device electrically connected to the power unit for preventing damage to the portable dryer.
- [c9] 9.A portable dryer comprising:
 - a housing with an opening at one end thereof;
 - a motor having a fan installed inside the housing;
 - a first heating filament coupled to the motor;
 - a second heating filament coupled to the motor and the first heating filament;
 - a third heating filament;
 - a fourth heating filament coupled to the third heating filament;
 - a switch for controlling operations of the portable dryer; and
 - a power unit for supplying electric power; wherein the power unit is electrically disconnected from the motor and all electric heating filaments when the switch is turned to an off position, the motor is electrically connected to the first heating filament in series and then to the third heating filament in parallel when the

switch is turned to a first operation position, and the first heating filament is electrically disconnected to the power unit and the motor is electrically connected to the second heating filament in series and then to the third-heating filament and the fourth heating filament in parallel when the switch is turned to a second operation position.

- [c10] 10. The portable dryer of claim 9, wherein when the switch is turned to the first operation position, the second heating filament and the fourth heating filament are electrically disconnected from the power unit.
- [c11] 11. The portable dryer of claim 9, wherein the switch comprises a conductor and a plurality of connecting nodes, the conductor able to establish electrical connections among the plurality of connecting nodes so that the power unit is electrically disconnected from the motor and the heating filaments, or electrically connected with both the motor and the third heating filament, or electrically connected with the motor, the third heating filament, and the fourth heating filament.
- [c12] 12. The portable dryer of claim 11, wherein the conductor is rotatably installed to establish electrical connections among the plurality of connecting nodes.

- [c13] 13.The portable dryer of claim 11, wherein the conductor is shiftable to establish electrical connections among the plurality of connecting nodes.
- [c14] 14.The portable dryer of claim 11, wherein the switch is a push-button switch.
- [c15] 15.The portable dryer of claim 9 further comprising a transformer electrically connected to the power unit for boosting an outputted voltage level of the power unit.
- [c16] 16.The portable dryer of claim 9 further comprising an overload protection device electrically connected to the power unit for preventing damage to the portable dryer.
- [c17] 17.A portable dryer comprising:
 - a housing with an opening at one end thereof;
 - a motor having a fan installed inside the housing;
 - a first heating filament coupled to the motor;
 - a second heating filament coupled to the motor and the first heating filament;
 - a third heating filament;
 - a fourth heating filament coupled to the third heating filament;
 - a switch for controlling operations of the portable dryer;
 - and
 - a power unit for supplying electric power;

wherein the power unit is electrically disconnected from the motor and all electric heating filaments when the switch is turned to an off position, the motor is electrically connected to the first heating filament in series and then to the third heating filament in parallel when the switch is turned to a first operation position, and the third heating filament is electrically disconnected to the power unit and both the first heating filament and the second heating filament are connected in parallel and electrically connected to the motor in series and then to the fourth heating filament in parallel when the switch is turned to a second operation position.

- [c18] 18. The portable dryer of claim 17, wherein when the switch is turned to the first operation position, the second heating filament and the fourth heating filament are electrically disconnected from the power unit.
- [c19] 19. The portable dryer of claim 17, wherein the switch comprises a conductor and a plurality of connecting nodes, the conductor able to establish electrical connections among the plurality of connecting nodes so that the power unit is electrically disconnected from the motor and the heating filaments, or electrically connected with both the motor and the third heating filament, or electrically connected with both the motor and the fourth heating filament.

- [c20] 20.The portable dryer of claim 19, wherein the conductor is rotatably installed to establish electrical connections among the plurality of connecting nodes.
- [c21] 21.The portable dryer of claim 19, wherein the conductor is shiftable to establish electrical connections among the plurality of connecting nodes.
- [c22] 22.The portable dryer of claim 19, wherein the switch is a push-button switch.
- [c23] 23.The portable dryer of claim 17 further comprising a transformer electrically connected to the power unit for boosting an outputted voltage level of the power unit.
- [c24] 24.The portable dryer of claim 17 further comprising an overload protection device electrically connected to the power unit for preventing damage to the portable dryer.
- [c25] 25.A portable dryer comprising:
 - a housing with an opening at one end thereof;
 - a motor having a fan installed inside the housing;
 - a first heating filament coupled to the motor;
 - a second heating filament coupled to the motor and the first heating filament;
 - a third heating filament;
 - a fourth heating filament coupled to the third heating fil-

ament;
a switch for controlling operations of the portable dryer;
and
a power unit for supplying electric power;
wherein the power unit is electrically disconnected from
the motor and all electric heating filaments when the
switch is turned to an off position, the motor is electri-
cally connected to the first heating filament in series and
then to the third heating filament in parallel when the
switch is turned to a first operation position, and the
first heating filament and the third heating filament are
electrically disconnected to the power unit and the motor
is electrically connected to the second heating filament
in series and then to the fourth heating filament in par-
allel when the switch is turned to a second operation po-
sition.

- [c26] 26. The portable dryer of claim 25, wherein when the switch is turned to the first operation position, the sec-ond heating filament and the fourth heating filament are-electrically disconnected from the power unit.
- [c27] 27. The portable dryer of claim 25, wherein the switch comprises a conductor and a plurality of connecting nodes, the conductor able to establish electrical connec-tions among the plurality of connecting nodes so that the power unit is electrically disconnected from the motor

and the heating filaments, or electrically connected with both the motor and the third heating filament, or electrically connected with both the motor and the fourth heating filament.

- [c28] 28.The portable dryer of claim 27, wherein the conductor is rotatably installed to establish electrical connections among the plurality of connecting nodes.
- [c29] 29.The portable dryer of claim 27, wherein the conductor is shiftable to establish electrical connections among the plurality of connecting nodes.
- [c30] 30.The portable dryer of claim 27, wherein the switch is a push-button switch.
- [c31] 31.The portable dryer of claim 25 further comprising a transformer electrically connected to the power unit for boosting an outputted voltage level of the power unit.
- [c32] 32.The portable dryer of claim 25 further comprising an overload protection device electrically connected to the power unit for preventing damage to the portable dryer.